UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/574,617	04/05/2006	Naoto Yokoyama	0033-1073PUS1	2104

2292 7590 02/24/2009

BIRCH STEWART KOLASCH & BIRCH
PO BOX 747
FALLS CHURCH, VA 22040-0747

EXAMINER	
CHANG, CHARLES S	

ART UNIT	PAPER NUMBER
2881	

NOTIFICATION DATE	DELIVERY MODE
02/24/2009	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

Office Action Summary	Application No.	Applicant(s)	
	10/574,617	YOKOYAMA ET AL.	
	Examiner	Art Unit	
	CHARLES CHANG	2881	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *16 October 2008*.

2a)☐ This action is FINAL. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-17* is/are pending in the application.

4a) Of the above claim(s) *1-3 and 5-11* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *4 and 12-17* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *16 October 2008* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *7/31/2008*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Applicant's request for reconsideration of the finality of the rejection of the last Office action is persuasive and, therefore, the finality of that action is withdrawn.

Election/Restrictions

1. Claims 1-3 and 5-11 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on May 23, 2008.

2. Applicant's election with traverse of claims 4 and 12-17 in the reply filed on May 23, 2008 is acknowledged. The traversal is on the ground that the examiner has not showed any type of burden. This is found not persuasive. Restriction for examination purposes as indicated is proper because all these inventions listed in this action are independent or distinct and there would be a serious search and examination burden if restriction were not required because one or more of the following reasons apply:

(a) the inventions have acquired a separate status in the art in view of their different classification;

(b) the inventions have acquired a separate status in the art due to their recognized divergent subject matter;

(c) the inventions require a different field of search (for example, searching different classes/subclasses or electronic resources, or employing different search queries);

(d) the prior art applicable to one invention would not likely be applicable to another invention;

(e) the inventions are likely to raise different non-prior art issues under 35 U.S.C. 101 and/or 35 U.S.C. 112, first paragraph.

The requirement is still deemed proper and is therefore made final.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 12 and 14-17 are rejected under 35 U.S.C. 102(b) as being anticipated by Miyazaki et al. (US 5969784).

Regarding claim 12, Miyazaki discloses a substrate with a spacer comprising a substrate (10); and a spacer (3) formed on said substrate, wherein said spacer has at least a first spacer portion (3R, 3G), and a second spacer portion (3B) formed above said first spacer portion, and an upper portion of said first spacer portion has a larger diameter than a bottom of said second spacer portion (Fig. 3).

Regarding claim 14, Miyazaki discloses a substrate with the spacer, wherein assuming that an upper portion of said spacer has a diameter of C, and said spacer has a height of H from the bottom to the upper portion, said spacer has a diameter of (1.8 x C) or more at the bottom, and has a diameter of (1.05 x C) or less at a height of (0.85 x H) from the bottom of said spacer (col. 6 lines 45-47, 56-59; col. 7 lines 4-7, 11-16).

Regarding claims 15-16, Miyazaki discloses a panel having the substrate with the spacer; an opposed substrate (50) opposed to said substrate with the spacer, and a liquid crystal layer (7) interposed between said substrate with the spacer and said opposed substrate (Fig. 3).

Regarding claim 17, Miyazaki discloses a method of manufacturing a panel, comprising the steps of: forming a frame-like seal member on a substrate surface of one of said substrate with the spacer (3) and said opposed substrate; applying a liquid crystal material to an inside of a frame of said seal member; and adhering said substrate with the spacer and said opposed substrate together to form said liquid crystal layer (Figs. 1-3; col. 5 lines 1-8).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

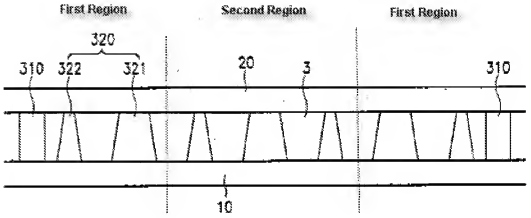
4. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Cho et al. (US 20040114087) in view of Murouchi (US 6067144).

Regarding claim 4, Cho discloses a liquid crystal display panel comprising: two substrates (10, 20) fixed together by a seal member (310) with their main surfaces opposed to each other; liquid crystal (3) sealingly stored in a region surrounded by said two substrates and said seal member and a plurality of columnar spacers (320) arranged in the region surrounded by said two substrates and said seal member,

wherein said columnar spacers include: a first columnar spacer (321), and a second columnar spacer (322) being higher than said first columnar spacer when receiving no load; said first columnar spacer is arranged in a first region near an inner side of said seal member and a second region located inside said first region; and said second columnar spacer is arranged in said second region (Fig. 2 below; Fig. 3). Cho does not explicitly disclose each of said plurality of second column spacers being arranged at a rate of one spacer per ten picture elements, and each of said plurality of first column spacers being arranged at a rate of one spacer per fifteen picture elements. Cho teaches the concentrations of the first and second spacers (section 0013). It would have been obvious at the time of the invention to one of ordinary skill in the art to have each of said plurality of second column spacers being arranged at a rate of one spacer per ten picture elements, and each of said plurality of first column spacers being arranged at a rate of one spacer per fifteen picture elements, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA). Cho also does not necessarily disclose the height of the second column spacers being 45 percent of the width of the second column spacers, and the height of the first column spacers being 43 percent of the width of the first column spacers. Murouchi teaches the height of the second column spacers being 45 percent of the width of the second column spacers, and the height of the first column spacers being 43 percent of the width of the first column spacers (col. 3 lines 7-26). It would have been obvious at the time of the invention to one of ordinary skill in the art to have the height of the second column

spacers be 45 percent of the width of the second column spacers, and the height of the first column spacers be 43 percent of the width of the first column spacers, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA).

FIG.2



5. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Miyazaki in view of Kijima et al. (US 6259500).

Regarding claim 13, Miyazaki teaches all the limitations required by the claim, but does not necessarily disclose a substrate with the spacer, wherein the upper portion of said first spacer portion has a groove surrounding said second spacer portion in a plan view. Kijima teaches a substrate with the spacer, wherein the upper portion of said first spacer portion (95) has a groove surrounding said second spacer portion in a plan view (Fig. 11B). The upper portion of said first spacer portion having a groove surrounding said second spacer portion in a plan view is demonstrated in the prior art and is applicable to a liquid crystal device. The upper portion of said first spacer portion

having a groove surrounding said second spacer portion in a plan view constitutes a common characteristic and falls within the bounds of Miyazaki. It would have been obvious at the time of the invention to one of ordinary skill in the art to use the teachings of Kijima to prevent a variation in cell thickness.

Response to Arguments

6. Applicant's arguments with respect to claims 4 and 12-17 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to CHARLES CHANG whose telephone number is (571)270-5024. The examiner can normally be reached on Mon-Fri 7:30A.M. - 5:00 P.M. EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Kim can be reached on (571) 272-2293. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

CC

/ROBERT KIM/
Supervisory Patent Examiner, Art Unit 2881